

Amendments to the Specification

Please replace the paragraph beginning at page 1, line 14 with the following amended paragraph:

FIG. 1 is a function block diagram illustrating the technological details of the prior patent application. Block 1 denotes a field instrument (for example, valve positioner), which communicates with a host system to perform process control (measurement, operation, monitoring, etc.). In block 1, numeral 101 denotes a data transmit means, number 102 denotes a data analyzing means, numeral 103 denotes an input-output characteristics measurement means, and numeral ~~103~~ 104 denotes a step response measurement means.

Please delete the Abstract at page 8 and add the following new Abstract:

Process control systems may include one or more diagnostic systems and/or processes. In particular implementations, a diagnostic system and process for a field instrument may include the ability to divide a signal input range into a plurality of zones with respect to an input axis or a time axis, measure input response characteristics for a zone with the field instrument, and store measurement data points for the zone in memory of the field instrument. The diagnostic system and process may also include the ability to transmit the measurement data points for the zone to a host application and, while transmitting the measurement data points for the zone, measure input response characteristics for a second zone with the field instrument.